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Date of Deposit: August 3, 2000

PATENT

Attorney's Ref. No. 60257

JC873 U.S. PTO
09/631409
08/03/00

jc849 U.S. PTO



08/03/00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box PATENT APPLICATION
TO THE ASSISTANT COMMISSIONER FOR PATENTS
Washington, D.C. 20231

Transmitted herewith for filing is the patent application of:

Inventor(s): Brundage et al.

For: LINKING FROM PAPER INVOICES AND STATEMENTS TO ON-LINE RESOURCES

Enclosed are:

- ☒ 4 pages of specification, 3 pages of claims, an abstract and a Combined Declaration and Power of Attorney.
- ☐ ___ sheet(s) of formal drawings.

For	Claims filed	FILING FEE		Number Extra	Rate	Basic Fee
		Number Allotted				\$690.00
Total Claims	17	20	=	0	\$18.00	
Independent Claims	7	3	=	4	\$78.00	\$312.00
TOTAL FILING FEE			=			\$1002.00

- ☒ Please return the enclosed postcard to confirm that the items listed above have been received.

Date: August 3, 2000

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Respectfully submitted,

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**LINKING FROM PAPER INVOICES AND STATEMENTS TO ON-LINE
RESOURCES**

Field of the Invention

5 The present invention relates to invoices, bank statements, and other account paperwork that is exchanged between parties in connection with commercial transactions, and more particularly relates to the integration of such paperwork with on-line systems.

Detailed Description

10 In application 09/571,422, filed May 15, 2000, the present assignee disclosed various arrangements for linking from physical objects (e.g., business cards, milk cartons, etc.), to associated on-line resources. The physical objects can be marked with steganographic digital watermarks (e.g., as detailed in application 09/503,881, filed February 14, 2000), or by other machine-readable indicia such as bar-codes, data glyphs,
15 etc.

 In accordance with the present invention, these same principles are applied to invoices, bank statements, and similar account paperwork.

 More particularly, such paperwork includes indicia that encodes information corresponding to an on-line address. When the indicia is sensed by a corresponding
20 sensor (e.g., a web cam), the address information is decoded, and a link is established between the user's computer and the corresponding on-line address. Most commonly, the encoded information is an identifier that is used to index a database record containing the on-line address. This address is then provided to an Internet browser on the user's computer, permitting a corresponding web page to be loaded. In other embodiments, the
25 on-line address can be directly encoded in the indicia.

 In the case of a utility bill or the like, a consumer shows the bill to the web cam. (The bill can be held in front of the camera, or the camera can be held over the bill.) Browser software on the consumer's computer responds an instant later with a web page customized to that user, including an electronic version of the bill. A user interface
30 included on the web page permits the consumer to authorize electronic payment of some

or all of the amount due, either by credit card, electronic funds transfer from a bank account, or otherwise. Account review (both current and historical), customer service, and related services can also be provided via the web page. The web page may also include third party targeted advertising, as well as promotional information provided by the billing company (e.g., a cable company may use such web sites to inform customers of upcoming events, a telephone company may use the sites to promote special offers, etc.)

In addition to on-line payment, such a web page may provide for printing of a corresponding paper check at the user's computer – with the payee, amount, and date fields filled in automatically so as to prevent transcription errors. This functionality may be provided by a linkage between the web data and check-writing features of programs such as Microsoft Money or Quicken. Or the web page can include an embedded applet that directly prints a corresponding check from the user's computer, etc. Regardless of payment technique, the system can update the user's corresponding account information accordingly (e.g., entering an electronic payment in an on-line check register).

Such an arrangement offers the best of the print and electronic worlds. For the customer, it reduces the time to pay bills, and avoids the time and expense associated with writing and mailing checks. Payments can be controlled by the customer to meet their particular needs (e.g., scheduling of payments, making partial payments). The system is simple – just show the paper invoice to the computer. And the system is failsafe, in that if the electronic network goes down, the user can write a check based on the paper invoice, as always.

For the billing business, the system reduces administration costs by reducing physical mail and check processing, while providing enhanced customer service. And the provision of targeted advertising provides a further revenue opportunity. and provides enhanced customer service.

Much the same arrangement can be used with bank statements - for checking accounts and the like. The paper statement mailed to the customer is digitally watermarked, permitting an on-line version of the statement to be accessed simply by showing the paper to a web cam. Customary on-line banking tools can be included at the

web site, including interfaces with common on-line banking software such as Microsoft Money and Quicken. (Indeed, the watermark reader may be included as an element of such software, or as an auxiliary utility that cooperates with the on-line banking software.)

- 5 Likewise, checks can be digitally watermarked – both checks printed by commercial check printers, and checks printed on home computers using various home banking software. The watermark can uniquely identify the check. When such a check is presented to a webcam, associated software can link to a database to obtain, and display, information relating to the check. The database can be on a remote computer (e.g., the
- 10 bank's computer), or can be local (e.g., a check register maintained on by a home computer software application, such as Microsoft Money, or Quicken).

- In all such approaches, a generally increased level of security is inherent, since the system relies on custody of the physical invoice or bank statement to gain access to the web page – a circumstance that imposters will find difficult to imitate. This
- 15 circumstance notwithstanding, the web page may also include password protection or other security measures to guard against unauthorized access, e.g., from discarded account paperwork. (Account paperwork older than a set threshold, e.g., 45 days, may be disabled from access, if desired, to help protect against unauthorized use.)

- To provide a comprehensive disclosure without unduly lengthening this
- 20 specification, applicant incorporates by reference the patent applications cited above.

 Having described and illustrated the principles of my invention with reference to specific embodiments, it will be recognized that the principles thereof can be implemented in many other, different, forms.

- For example, while the detailed description contemplated use in conjunction with
- 25 a web cam and personal computer, a great variety of other platforms can also be employed. These include set top boxes, smart phones, palm computers and organizers, etc. – any of which can provide Internet linking.

- Likewise, while the detailed description particularly contemplated use of digital watermark technology, some of the same advantages can be achieved through use of
- 30 other machine readable indicia, including bar codes, data glyphs, etc.

Moreover, the particular combinations of elements and features in the above-detailed embodiments are exemplary only; the interchanging and substitution of these teachings with teachings in the incorporated-by-reference applications are also contemplated.

- 5 In view of the wide variety of embodiments to which the principles and features discussed above can be applied, it should be apparent that the detailed embodiments are illustrative only and should not be taken as limiting the scope of the invention. Rather, I claim as my invention all such modifications as may come within the scope and spirit of the following claims and equivalents thereof.

I CLAIM:

1. An on-line method of paying funds from a first party to a second party in accordance with a statement detailing an amount owed, comprising:

- 5 the first party receiving said statement, on paper, by conventional mail;
 the first party presenting at least a portion of said paper to an optical sensor; and
 processing data from said optical sensor, including displaying a page of electronic
information related to said statement on a screen of a data terminal.

- 10 2. The method of claim 1 wherein said page of electronic information permits the
first party to authorize electronic disbursement of said funds to said second party.

3. The method of claim 1 that further includes printing a check on a printer
associated with the first party, for payment of said statement, without manually entering
15 the payee on the check.

4. The method of claim 1 wherein the statement becomes ineffective in leading to
said page of electronic information after the passage of a predetermined period, so as to
prevent discarded statements from being used by unauthorized persons to gain access to
20 said page of electronic information.

5. A computer storage medium having instructions thereon causing a computer to
perform the processing of claim 1.

- 25 6. A method for accessing on-line account information corresponding to a bank
or other commercial account, comprising presenting a printed account statement, received
by conventional mail, to an optical sensor.

7. A method comprising:
presenting a printed account statement, received by conventional mail, to an
optical sensor; and
in response thereto, loading an Internet web page having electronic information
5 corresponding to said account.

8. The method of claim 7 wherein the account is a utility account.

9. The method of claim 7 wherein the account is a bank account.

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10. An invoice having a machine readable indicia thereon, said indicia
representing plural bits of binary data, said indicia being generally un-intelligible to
human observers thereof, the binary data represented by said indicia serving to indicate
an on-line computer address associated with said invoice.

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11. The invoice of claim 10 wherein the indicia includes an identifier that is
associated with said on-line computer address through a database record.

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12. The invoice of claim 10 wherein the binary data represents said on-line
computer address.

13. The invoice of claim 10 wherein said indicia comprises a steganographic
digital watermark.

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14. The invoice of claim 10 wherein said indicia comprises a barcode.

15. A checking account statement having a machine readable indicia thereon, said indicia representing plural bits of binary data, said indicia being generally unintelligible to human observers thereof, the binary data represented by said indicia serving to indicate an on-line computer address associated with said checking account statement.

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16. A printed check having a steganographic digital watermark encoded thereon, said watermark representing plural bits of binary data, the binary data represented by said watermark serving to indicate an on-line computer address associated with said check.

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17. A computer storage medium having an electronic checkbook software program stored thereon, wherein said program incorporates, or cooperates with, software instructions that process image data to extract a steganographically-encoded watermark payload therefrom.

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LINKING FROM PAPER INVOICES AND STATEMENTS TO ON-LINE
RESOURCES

Abstract of the Disclosure

- 5 Invoices, bank statements, checks, and other transactional paperwork is encoded with a steganographic digital watermark that encodes identification information. When a user shows such a paper (e.g., an invoice) to an optical input device associated with a computer, a browser session is initiated that uses the identification information to transport the user to a web page corresponding to that invoice. The web page provides a
- 10 variety of functionality, including account review and payment, and customer service.

COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name, I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled LINKING FROM PAPER INVOICES AND STATEMENTS TO ON-LINE RESOURCES, the specification of which

☒ is attached hereto.

☐ was described and claimed in PCT International Application No. _____, filed on _____, and as amended under PCT Article 19 on _____ (if applicable).

☐ and was amended on _____ (if applicable).

☐ with amendments through _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56. If this is a continuation-in-part application filed under the conditions specified in 35 U.S.C. § 120 which discloses and claims subject matter in addition to that disclosed in the prior copending application, I further acknowledge the duty to disclose material information as defined in 37 CFR § 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT International application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT International application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) on which priority is claimed:

Prior Foreign Application(s)	Priority Claimed
<div style="display: flex; justify-content: space-around;"> <div>_____ (Number)</div> <div>_____ (Country)</div> <div>_____ (Day/Month/Year Filed)</div> </div>	<div style="display: flex; justify-content: space-around;"> <div><input type="checkbox"/> Yes</div> <div><input type="checkbox"/> No</div> </div>

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

Application Number	Filing Date
_____	_____

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) or § 365(c) of any PCT International application(s) designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT International filing date of this application:

(Application No.)	(Filing Date)	(Status: patented, Pending, abandoned)
_____	_____	_____

The undersigned hereby authorizes the U.S. attorney or agent named herein to accept and follow instructions from _____ as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between the U.S. attorney or agent and the undersigned. In the event of a change in the persons from whom instructions may be taken, the U.S. attorney or agent named herein will be so notified by the undersigned.

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application, to file a corresponding international application, and to transact all business in the Patent and Trademark Office connected therewith:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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